

See 10/338,350

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	("US-6075003-\$.did.").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:01
L2	1	US-6075003-\$.did.	USPAT	OR	OFF	2007/05/13 09:02
L3	1332	zeta and fluoro\$9 and spray	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:03
L4	88	zeta and fluoro\$9 and spray and dryer	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:04
L5	19	zeta and fluoro\$9 and spray and dryer and (kit or container) and surfactant and (mist or aerosol or vapor or drop\$9)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:05
L6	16	zeta and fluoro\$9 and spray and dryer and (kit or container) and surfactant and (mist or aerosol or vapor or drop\$9) and device	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:05
L7	1197683	L6 and zeta potential	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:05
L8	16	L6 and (zeta potential)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:05
L9	16	L6 and (zeta potential modifier)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:08
L10	2499	(zeta potential modifier) and (fluoro\$9) and (spray or mist or vapor or drop\$9) and dryer	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:09
L11	342	L10 and (fabric or textile or garment) and surfactant	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:09
L12	285	L11 and (device or kit or container)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:10

## EAST Search History

L13	131	L12 and (tumble dryer and iron)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:10
L14	118	L13 and glycol	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:11
L15	1	L14 and (matrix same absorbent)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:12
L16	8	L14 and ((sheet or sponge or pad) same absorbent)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:12
L17	31	L14 and ((sheet or sponge or pad) same dryer)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:17
L18	10	L17 and instruction	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:17
L19	10	L17 and (instruction or kit)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/05/13 09:17

# SEARCH NOTES



MPEP 2712.01

The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont  
Material Safety Data Sheet

Page 1

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"ZONYL" 6991 FABRIC PROTECTOR  
5469PP Revised 3-MAR-1997  
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CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
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Material Identification

"ZONYL" is a registered trademark of DuPont.

Corporate MSDS Number : DU002420

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont  
1007 Market Street  
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.  
302-774-1000)  
Transport Emergency : CHEMTREC 1-800-424-9300 (outside U.S.  
703-527-3887)  
Medical Emergency : 1-800-441-3637 (outside the U.S.  
302-774-1000)

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COMPOSITION/INFORMATION ON INGREDIENTS  
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Components

Material	CAS Number	%
Acrylic Copolymer		5-15
(NJ Trade Secret Registry # 00850201001-5298P)		
Paraffin Wax	8002-74-2	5-10
Acetic Acid	64-19-7	1-5
Fluorinated Acrylic Polymer		5-10
(NJ Trade Secret Registry # 00850201001-5497P)		
Non-ionic Dispersant		0-2
(NJ Trade Secret Registry # 00850201001-5299P)		
Water	7732-18-5	75-80

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HAZARDS IDENTIFICATION  
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# Potential Health Effects

Skin contact may cause skin irritation with discomfort or rash. Acetic acid has been infrequently associated with skin sensitization in humans.

Eye contact may cause eye irritation with discomfort, tearing, or blurring of vision.

## (HAZARDS IDENTIFICATION - Continued)

Inhalation may cause irritation of the nose, throat and lungs with sneezing, sore throat, runny nose, difficult breathing or shortness of breath. Inhalation of aerosolized respirable particles may cause pulmonary edema (body fluid in the lungs). Symptoms may be modest initially, followed in hours by severe shortness of breath requiring prompt medical attention. Gross overexposure may be fatal.

Ingestion of acetic acid may cause burns of the mouth, throat, esophagus and stomach, with severe pain, bleeding, vomiting, diarrhea and collapse of blood pressure - damage may appear days after exposure. Gross overexposure to acetic acid may cause fatality.

## Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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FIRST AID MEASURES  
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## First Aid

## INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

## SKIN CONTACT

Flush skin with water after contact. Wash contaminated clothing before reuse.

## EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

## INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

## Notes to Physicians

Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400 mL water and mix thoroughly. Administer 5 mL/kg, or 350 mL for an average adult.

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FIRE FIGHTING MEASURES  
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## # Flammable Properties

Flash Point : Does not ignite  
Method : PMCC

Non-combustible liquid. Hazardous decomposition products including carbon dioxide, carbon monoxide, hydrogen chloride, hydrogen fluoride, toxic gases, or particles may be formed during combustion. These products may cause severe eye, nose, and throat irritation or toxic effects.

## Extinguishing Media

Water Spray, Foam, Dry Chemical, CO2.

## Fire Fighting Instructions

Evacuate personnel to a safe area. Wear self-contained breathing apparatus. Wear full protective equipment.

Avoid breathing decomposition products.

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ACCIDENTAL RELEASE MEASURES  
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## Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

## Spill Clean Up

Soak up with sawdust, sand, oil dry or other absorbent material. Shovel or sweep up.

## Accidental Release Measures

Flush spill with water.

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HANDLING AND STORAGE  
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## Handling (Personnel)

Avoid breathing vapors or mist. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling.

Avoid circumstances that produce respirable particles unless suitable ventilation and respirator are used.

## (HANDLING AND STORAGE - Continued)

## Storage

Store in a well ventilated place. Keep container tightly closed.

Keep away from open flames. Perishable if frozen.

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EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## # Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

Vent dryer fumes outside work area. Do not aerosolize. In spray applications, use airless type pressure spray equipment at less than 60 psi and exhaust ducts, drip pans or other design features to minimize worker exposure to mists and overspray.

## Personal Protective Equipment

## EYE/FACE PROTECTION

Wear coverall chemical splash goggles.

## RESPIRATORS

Where there is potential for airborne exposures, wear NIOSH approved respiratory protection.

## PROTECTIVE CLOTHING

Where there is potential for skin contact have available and wear as appropriate, impervious gloves, apron, pants, and jacket.

## Exposure Guidelines

## Exposure Limits

## "ZONYL" 6991 FABRIC PROTECTOR

PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
AEL * (DuPont)	: 1 mg/m3, 8 Hr. TWA, respirable particulate

## Other Applicable Exposure Limits

## Paraffin Wax

PEL (OSHA) : None Established  
TLV (ACGIH) : 2 mg/m<sup>3</sup>, fume, 8 Hr. TWA  
AEL \* (DuPont) : None Established

## Acetic Acid

PEL (OSHA) : 10 ppm, 25 mg/m<sup>3</sup>, 8 Hr. TWA  
TLV (ACGIH) : 10 ppm, 25 mg/m<sup>3</sup>, 8 Hr. TWA  
STEEL 15 ppm, 37 mg/m<sup>3</sup>  
AEL \* (DuPont) : 10 ppm, 8 & 12 Hr. TWA

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

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PHYSICAL AND CHEMICAL PROPERTIES  
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## Physical Data

Boiling Point : 100 C (212 F) @ 760 mm Hg  
% Volatiles : 70 WT%  
pH : 2-5  
Odor : Mild  
Form : Liquid, Milky  
Color : White to Cream  
Specific Gravity : 1.01

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STABILITY AND REACTIVITY  
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## Chemical Stability

Stable at normal temperatures and storage conditions.

## Incompatibility with Other Materials

None reasonably foreseeable.

## Decomposition

Hazardous decomposition products including carbon dioxide, carbon monoxide, hydrogen chloride, hydrogen fluoride, toxic gases or particles may be formed during combustion. These products may cause severe eye, nose, and throat irritation or toxic effects.

## Polymerization

Polymerization will not occur.

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TOXICOLOGICAL INFORMATION  
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## Animal Data

## Paraffin Wax:

Skin Absorption LD50: >4 mL/kg in rabbits  
Oral LD50: >5,000 mg/kg in rats

## Acetic Acid:

Inhalation 1 hour LC50: 5620 ppm in mice  
Skin Absorption LD50: 1060 mg/kg in rabbits  
Oral LD50: 3310 mg/kg in rats, when tested  
as a neutralized solution

## Fluorinated Acrylic Polymer:

(NJ Trade Secret Registry # 00850201001-5497P)

Oral ALD: >11,000 mg/kg in rats

Paraffin Wax is not a skin irritant, is a mild eye irritant, and is untested for animal sensitization. The effects in animals from acute, subchronic, or chronic exposure by inhalation, ingestion, or skin contact have not been determined. Tests in animals demonstrate no carcinogenic activity. No animal test reports are available to define mutagenic, developmental, or reproductive effects.

Animal testing indicates that Acetic Acid is corrosive to the skin, when tested undiluted. Acetic Acid is a slight skin irritant, when tested as 10 % solution; it has not been tested for skin sensitization. Acetic Acid is corrosive to the eye. Repeated ingestion exposure to Acetic Acid caused gastrointestinal tract irritation, anemia, reduced growth rate, and decreased body weight. Single inhalation exposure to Acetic Acid caused labored breathing, altered respiratory rate, and altered white blood cell counts. Repeated exposure caused histopathological changes of the nasal cavity. In animal testing Acetic Acid has not caused developmental toxicity. Tests in bacterial cell cultures are generally negative. In mammalian cell cultures Acetic Acid has caused genetic toxicity. No adequate animal data are available to define the carcinogenic potential of this material. No animal data are available to define reproductive toxicity.

Fluorinated Acrylic Polymer (NJ Trade Secret Registry # 00850201001-5497P) is a slight skin irritant, is a mild eye irritant, but is untested for animal sensitization. No observed adverse effects were noted from single exposures by ingestion. No animal test reports are available to define carcinogenic, mutagenic, developmental, or reproductive effects.



## (TOXICOLOGICAL INFORMATION - Continued)

Non-ionic Dispersant (NJ Trade Secret Registry # 00850201001-5299P) is a severe skin irritant and a slight eye irritant in animals. Long-term exposure in rats, and hamsters given 5, 10 and 15% in their diets caused histopathological changes of the testes with decreased spermatogenesis, and liver and kidney abnormalities. A lifetime feeding study with a related material increased the incidence of bladder stones and tumors at very high levels (25% of the animal's diet). Design flaws in the experiment and the small number of animals that actually developed bladder tumors (one of sixty mice and one of sixty rats) preclude making a conclusion about whether or not the compound caused the tumors. This material does not produce genetic damage in bacterial cell cultures but has not been tested in animals. Tests for developmental toxicity have not been performed. Reproduction studies showed a decrease in viability of young rats, which was partly due to maternal neglect.

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ECOLOGICAL INFORMATION  
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## Ecotoxicological Information

Acetic acid is slightly toxic. 96 hour LC50, fathead minnows: 79 mg/L.

Fluorinated Acrylic Polymer (NJ Trade Secret Registry # 00850201001-5497P) is slightly toxic. The 96 hour LC50 in fathead minnows: 72 mg/L.

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DISPOSAL CONSIDERATIONS  
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## Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not burn.

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TRANSPORTATION INFORMATION  
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## Shipping Information

DOT  
Proper Shipping Name : Not Regulated

DOT/IMO  
Proper Shipping Name : Not Regulated

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REGULATORY INFORMATION  
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## U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

## TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes  
Chronic : No  
Fire : No  
Reactivity : No  
Pressure : No

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OTHER INFORMATION  
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## NFPA, NPCA-HMIS

NPCA-HMIS Rating  
Health : 2  
Flammability : 0  
Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

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The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : MSDS Coordinator  
Address : DuPont Chemical Solutions Enterprise  
Wilmington, De. 19898  
Telephone : 800-441-7515

# Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS